Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Electronic Doping of Organic Semiconductors – Fundamental Understanding and Application in Optoelectronic Devices

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TIFR, Hyderabad

Organic semiconductors (OSC) are key materials for next-generation optoelectronic devices, where controlled molecular doping plays a crucial role in tuning their electrical and optical properties. In this talk, I will present doping strategies for OSC and discuss how electronic doping affects charge transport and the electronic properties of OSC materials. I will present a new generic method for doping of OSC and its use in realising highly efficient and stable perovskite solar cells. I will discuss the role of counter-anions in controlling charge carrier density, doping efficiency, and film stability. I will discuss polaron formation and charge delocalisation in model systems to provide a clearer understanding of the structure–property relationships in doped organic semiconductors. In addition, I will explain how to make OSC ambient-processible using bespoke organic salts.

Friday, May 8th 2026

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFRH